

REMARKS

Filed concurrently herewith is a Request for a Three-Month Extension of Time which extends the shortened statutory period of response to August 20, 2003. Accordingly, Applicants' respectfully submit that this response is being timely filed.

The Official Action dated February 20, 2003 has been received and its contents carefully noted. In view thereof, claims 1-7 and 11 have been canceled, claims 10 and 12 have been amended and new claim 24 has been added in order to better define that which Applicants' regard as the invention. Accordingly, claims 8-10 and 12-24 are presently pending in the instant application with claims 8, 9 and 13-23 being withdrawn from further consideration by the Examiner.

With reference to paragraphs 3, 4 and 5 of the Official Action, it is noted that claims 1-7 and 10-12 have been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,514,745 issued to Yoshino in view of U.S. Patent No. 5,409,991 issued to Mitsuno et al., that claims 1, 3-7 and 10-12 have been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,484,835 issued to Sobajima et al. et al. in view of Mitsuno et al. and Yoshino and claim 10 has been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,792,527 issued to Yoshimitsu et al. in view of Mitsuno et al. and Yoshino. These rejections are respectfully traversed in that the combination of prior art proposed by the Examiner fails to disclose or remotely suggest that which is presently set forth by Applicants' claimed invention.

With respect to independent claim 10, as amended, this claim recites a long glass fiber filler resin material for molding comprising a masterbatch comprising a matrix polymer of a homopolypropylene having a pentad isotactic index of at least 95% and a molecular weight of 70000 to 125000, a long glass fiber filler included in a content of 30 to 50 mass percent with

respect to a total mass, a surface of the long glass fiber filler being treated with a coupling agent and an affinity providing component comprising at least one selected from a group consisting of maleic anhydride-denatured polypropylene and acrylic acid denatured polypropylene as a constituent having a functional group that reacts chemically with the coupling agent with which the surface of the long glass fiber filler is treated, wherein at least the matrix polymer and the long glass fiber filler form a composite, and a diluent polymer of an ethylene, propylene block copolymer comprising a polypropylene component having a pentad isotactic index of at least 95%, wherein a melt flow rate of the matrix polymer of the masterbatch measured according to JIS K7210, temperature of 230°C and a load of 21.18^N is 100 to 300g/10min. and the melt flow rate of the matrix polymer of the masterbatch is larger than twice a melt flow rate of the diluent polymer. Clearly, these features are neither disclosed in nor suggested by the prior art of record.

Specifically, in accordance with Applicants' claimed invention, homopolypropylene is used as a matrix polymer, and ethylene propylene block copolymer is used as a diluent polymer. In doing so, a molded article demonstrating high mechanical properties can be obtained. More specifically, the matrix polymer of the homopolypropylene enables high crystallinity so that a molded article having a high bending strength can be obtained wherein, resin materials having a functional group such as a denature polypropylene prevent the high crystallinity. Furthermore, the diluent polymer of the ethylene-propylene block copolymer results in a molded article having high impact strength and a high bending strength.

Additionally, as recited in independent claim 10, a melt flow rate of the matrix polymer is larger than twice the melt flow rate of the diluent polymer, so that breakage of the long glass fiber filler can be effectively suppressed and a molded article having high impact strength can be obtained. Furthermore, a thick skin layer made of a matrix polymer can be

formed in the molded article such that a molded article having visibly pleasing design properties can be obtained as set forth in Applicants' specification on page 16, line 11 to page 17, line 21.

Additionally, in accordance with Applicants' claimed invention, the pentad isotactic index (IP Index) of the polypropylene components both of the matrix polymer and the diluent polymer is 95% or more. More specifically, since the melt-flow rate of the diluent polymer is relatively low, a molded article having a high bending modulus can be obtained. Further, due to the high IP Index, since most of the methyl groups have the same configuration along the polymer chain, the polypropylene molecules are arranged as close to each other as possible so that the crystallinity is high when solidified. Consequently, since the diluent polymer having a lower melt flow rate than that of the matrix polymer contributes to an increase of the strength of the resin component, a molded article having an extremely higher bending modulus than expected can be obtained due to a multiplier effect of the melt flow rate and the IP Index. Again, this feature is noted on page 16, line 25 to page 17, line 5 of Applicants' specification.

With this in mind, it is noted that the Yoshino reference discloses that an ethylene propylene block copolymer is used as a diluent polymer; however, a modified polypropylene is used as a matrix polymer. Thus, there can be found no disclosure nor remote suggestion of using a homopolypropylene as the matrix polymer which as noted hereinabove, results in a molded article demonstrating high mechanical properties. Specifically, having a matrix polymer of homopolypropylene enables high crystallinity so that the resultant molded article exhibits a high bending strength.

Additionally, Yoshino's embodiments disclose a resin material having a range which is beyond that of a ratio of the melt flow rate recited in Applicants' present claimed

invention. The first embodiment, for example, the melt flow rate of the matrix polymer is 82g/10min. while that of the diluent polymer is 45g/10min. Accordingly, in that Applicants' claimed invention recites that the melt flow rate is 100 to 300g/10min., it is respectfully submitted that Yoshino clearly fails to disclose or suggest that which is presently set forth by Applicants' claimed invention.

Furthermore, Yoshino fails to disclose or suggest the multiplier effect of the melt flow rate and the IP Index and the molecular weight of the matrix polymer as discussed hereinabove in detail.

With respect to the teachings of Mitsuno et al., this reference discloses that the IP Index of a polypropylene component of a matrix polymer is preferably at least 97%. However, the resin material using the short glass fiber as a filler includes no diluent polymer, and therefore the assumption with respect to the disclosure of Mitsuno et al. is significantly different from that of the present invention. Thus, Mitsuno et al. do not disclose or suggest the multiplier effect of the melt flow rate and the IP Index as discussed in detail hereinabove.

Moreover, Mitsuno et al. clearly fails to disclose or remotely suggest the molecular weight of the matrix polymer specifically set forth in accordance with Applicants' claimed invention. Accordingly, it is respectfully submitted that Applicants' claimed invention as set forth in the several pending claims, clearly distinguishes over the prior art combination for the reasons discussed hereinabove in detail.

With reference now to paragraph 4 of the Office Action, claims 1, 3-7 and 10-12 have been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,484,835 issued to Sobajima et al. in view of the teachings of Mitsuno et al. and Yoshino. This rejection is respectfully traversed in that the combination proposed by the Examiner clearly

fails to disclose or remotely suggest that which is presently set forth by Applicants' claimed invention.

In addition to the shortcomings associated with the patents to Mitsuno et al. and Yoshino discussed in detail hereinabove, the patent to Sobajima et al. clearly fails to disclose or remotely suggest that which is presently set forth by Applicants' claimed invention when taken in combination with the above-noted references. Specifically, Sobajima et al. fails to disclose or suggest that a melt flow rate of the matrix polymer is larger than twice the melt flow rate of a diluent polymer. None of the embodiments of the Sobajima et al. reference satisfies the requirements set forth in accordance with Applicants' claimed invention. Moreover, Sobajima et al. as well as Yoshino and Mitsuno et al. fail to disclose or remotely suggest that the multiplier effect of the melt flow rate and the IP Index and the molecular weight of the matrix polymer set forth in accordance with Applicants' claimed invention. Accordingly, it is respectfully submitted that Applicants' claimed invention as set forth in the several pending claims clearly distinguishes over the teachings of Sobajima et al. in view of Mitsuno et al. and Yoshino and are in proper condition for allowance.

With reference now to paragraph 5 of the Office Action, claim 10 has been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,792,527 issued to Yoshimitsu et al. in view of Mitsuno et al. and Yoshino. Again, this rejection is respectfully traversed in that the combination proposed by the Examiner neither discloses nor suggests that which is presently set forth by Applicants' claimed invention.

As the Examiner can readily appreciate, like Yoshino and Mitsuno et al., Yoshimitsu et al. disclose a resin material including no diluent polymer and thus the assumption and the material set forth by Yoshimitsu et al. clearly are different from that of the present invention. Clearly, the Yoshimitsu et al. reference fails to disclose or remotely suggest the multiplier

effect of the melt flow rate and the IP Index as is specifically set forth by Applicants' claimed invention. Accordingly, the combination proposed by the Examiner in rejecting claim 10 clearly fails to disclose or remotely suggest that which is presently set forth claim in 10, as amended.

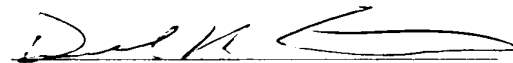
In summary, Applicants' claimed invention clearly sets forth a long glass fiber filler reinforced resin material including the features that the melt flow of the matrix polymer is larger than twice the melt flow rate of the diluent polymer and the IP Index of the propylene component of both the matrix polymer and the diluent polymer is at least 95%. With this multiplier effect, a molded article having an extremely high bending modules can be obtained.

Only the Mitsuno et al. reference discloses a high IP Index. However, the resin material taught by Mitsuno et al. utilizes a short glass fiber as a filler and includes no diluent polymer, thus, assumptions set forth therein and the disclosure of Mitsuno et al. is clearly different from that of the present invention. Furthermore, since the resin material of the Mitsuno et al. reference does not include a masterbatch, it is impossible to combine it with the resin materials disclosed in the other references. Even if the resin material disclosed in Mitsuno et al. were used as a masterbatch and it were combined with any of the resin material disclosed in the remaining references, it would not be readily obvious to those skilled in the art that a molded article having an extremely high bending modulus be obtained by the multiplier effect of the IP Index and the melt flow rate since none of the references disclose or suggest the IP Index and the melt flow rate as set forth in accordance with Applicants' claimed invention.

Therefore, in view of the foregoing it is respectfully requested that the rejections of record be reconsidered and withdrawn by the Examiner, that claims 10, 12 and 24 be allowed and that the application be passed to issue.

Should the Examiner believe a conference would be of benefit in expediting the prosecution of the instant application, he is hereby invited to telephone counsel to arrange such a conference.

Respectfully submitted,



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